

AMENDMENTS TO THE CLAIMS

Claims 1-13 (Canceled)

Claim 14 (Withdrawn) A substrate polishing apparatus comprising:

- a polishing table having a polishing surface;
- a top ring for holding a substrate, wherein a semiconductor substrate held by said top ring is pressed against said polishing surface and a surface to be polished of the semiconductor substrate is polished by relative movement between the semiconductor substrate and said polishing surface;
- a pressing force changing mechanism for changing a pressing force pressing the semiconductor substrate against said polishing surface;
- a relative movement speed changing mechanism for changing speed of relative movement between said top ring and said polishing table;
- a film thickness detector including an eddy current monitor for detecting a film thickness of the semiconductor substrate with the eddy current monitor; and
- a control mechanism operable to control plural polishing processes on said polishing surface of said polishing table while changing the pressing force and the relative movement speed through said pressing force changing mechanism and said relative movement speed changing mechanism and operable to control change from a preceding polishing process to a next polishing process on the basis of a film thickness detection signal from said film thickness detector.

Claim 15 (Withdrawn) The substrate polishing apparatus of claim 14, and further comprising one of a dresser for dressing said polishing surface of said polishing table and a cleaner for cleaning said polishing surface of said polishing table, wherein said control mechanism is operable to control said dresser or said cleaner between the polishing processes to effect dressing or cleaning of said polishing surface of said polishing table.

Claim 16 (Currently Amended) A method of polishing a substrate having a first metal layer and a second metal layer formed under the first metal layer, comprising:

polishing the first metal layer by pressing and moving the first metal layer against a polishing surface with a first polishing fluid;

measuring a film thickness of the first metal layer with an eddy current monitor during said polishing the first metal layer, wherein the eddy current monitor detects an end point of said polishing the first metal layer when the eddy current monitor detects a predetermined thickness of the first metal layer;

cleaning the polishing surface by supplying water for removing the first polishing fluid on the polishing surface after the eddy current monitor has detected the end point of said polishing the first metal layer;

polishing the second metal layer after said cleaning the polishing surface by pressing and moving the second layer against the polishing surface with a second polishing fluid; and

measuring a thickness of the second metal layer with an optical film thickness monitor during said polishing the second metal layer ~~changing the first polishing fluid to a second polishing fluid when the eddy current monitor detects a state in which the first metal layer has been removed.~~

Claim 17 (Canceled)

Claim 18 (Currently Amended) The method of claim 16, wherein the second metal layer of the substrate is pressed against the polishing surface by a load which is smaller than a load when polishing the first metal layer ~~can be changed.~~

Claim 19 (Canceled)

Claim 20 (Currently Amended) The method of claim 17, wherein the first and second polishing liquids have a pH at the same side of pH 7 and further comprising polishing the second metal layer by pressing and moving the second metal layer against the polishing surface with a third polishing liquid which is an alkaline liquid.

Claim 21 (Canceled)

Claim 22 (Currently Amended) The method of claim 20, and further comprising cleaning the substrate after said polishing the second metal layer, drying the substrate after said cleaning the substrate, detecting a film thickness of the substrate after said drying and storing the film thickness of the substrate.

Claim 23 (Currently Amended) A method of polishing a substrate having a first metal layer and a second metal layer formed under the first metal layer, comprising:

polishing the first metal layer by pressing and moving the first metal layer against a polishing surface with a first polishing fluid;

measuring a film thickness of the first metal layer with an eddy current monitor during said polishing the first metal layer, wherein the eddy current monitor detects an end point of said polishing the first metal layer when the eddy current monitor detects a state in which the first metal layer has been removed;

cleaning the polishing surface by supplying water for removing the first polishing fluid on the polishing surface after the eddy current monitor has detected an end point of said polishing the first layer;

~~changing the first polishing fluid to a second polishing fluid when the eddy current monitor detects a state in which the first metal layer has been removed;~~

polishing the second metal layer after said cleaning the polishing surface by pressing and moving the second metal layer against the polishing surface with ~~the~~ a second polishing fluid; and

~~detecting a film~~ measuring a thickness of the second metal layer with an ~~eddy current optical film thickness~~ monitor during said polishing the second metal layer.

Claim 24 (Canceled)

Claim 25 (Currently Amended) The method of claim 23, wherein the second metal layer of the substrate is pressed against the polishing surface by a load which is smaller than a load when polishing the first metal layer ~~can be changed~~.

Claim 26 (Canceled)

Claim 27 (Currently Amended) The method of claim ~~24~~ 23, wherein the first and second polishing liquids have a pH at the same side of pH 7 ~~and further comprising polishing the second metal layer by pressing and moving the second metal layer against the polishing surface with a third polishing liquid which is an alkaline liquid.~~

Claim 28 (Canceled)

Claim 29 (Currently Amended) The method of claim 27, and further comprising cleaning the substrate after said polishing the second metal layer, drying the substrate after said cleaning the substrate, detecting a film thickness of the substrate after said drying and storing the film thickness of the substrate.

Claims 30- 37 Canceled)